

### ABSTRACT

This invention relates to the regulation and manipulation of sucrose content in a sugar-storing plant, such as sugarcane, by regulating the activity of the PFP enzyme in the plant. It has been found that the down regulation of the PFP enzyme by decreasing the concentration of one of subunits, namely the  $\beta$ -subunit, of the enzyme increases the sucrose content of the plant. In a preferred embodiment of the invention, the activity of the PFP enzyme is down regulated by the introduction of an untranslatable form, or an antisense form of an isolated nucleotide sequence of the invention.